A.4.16 AOC 26

Description

AOC 26 consists of the East Yard Bunker Slab, which is located directly east of Tank 765 in the East Yard. The Bunker Slab consists of two separate rectangular, concrete slabs. The first slab encompasses an area of approximately 25 feet wide by 50 feet long. This slab was used to house six pumps, all but one have been decommissioned. The second smaller slab encompasses an area of approximately 5 feet wide by 10 feet long. No pumps are currently located on the smaller slab. The pumps and valves were historically used to blend and transport a variety of petroleum products from ships and barges to ASTs. As shown on Figure A.4.13, AOC 26 is completely located within the footprint of the EY4b LNAPL area. A number of soil borings and sampling activities have been conducted in this area during the delineation of the EY4b LNAPL area.

As shown on Figure A.4.13, and summarized on Table A.4.13 data from five borings, six soil samples, two monitoring well samples and three hydropunch samples have been used to characterize this AOC. In addition, relevant data from AOC 14 and the AOC 16 EY4b LNAPL area are also shown on Table A.4.13 for delineation purposes. Three hydropunch groundwater samples were collected during the 1st-Phase Groundwater Investigation. During the Full RFI, six soil samples were collected from two downgradient monitoring wells and analyzed for TCL VOCs and SVOCs, and TAL metals.

Soil

As noted above, AOC 26 is located entirely within LNAPL Area EY4b, and any potential impacts from AOC 26 would be fully encompassed by the EY4b LNAPL area.

The following table summarizes the number of samples where delineation criteria were exceeded in soil samples:

Constituents of Concern	Surface soils (0-2')	Fill Material (>2-ft)	Native soils	Total)
Benzene	1/2	1/3	0/1	2/6
Other VOCs	0/2	0/3	0/1	0/16
Benzo(a)pyrene	1/2	1/3	0/1	2/6
Other SVOCs	1/2	1/3	0/1	2/6
Lead	0/2	0/3	0/1	0/6
Other TAL Metals[a]	1/2	1/3	0/1	2/6

[a]Totals do not include naturally occurring metal compounds in excess of the delineation criteria (Al, Ca, Fe, Mg, Mn, K and Na).

Surface soils (0 to 2 feet bgs)

Limited petroleum-related impacts were observed in surface soils in and around AOC 26, although benzene (7.1 mg/kg), benzo(a)pyrene (1J mg/kg) and a couple of other PAHs

were detected above the soil delineation criteria in the surface soil sample (S0853A4) from MW-149. Other than naturally-occurring iron, arsenic (31.1 mg/kg) was the only metal to exceed the applicable soil delineation criterion (20 mg/kg). This relatively low concentration of arsenic (31.1 mg/kg) is well within the normal range for soils, particularly glauconitic soils in the Coastal Plain (Saunders, 2003).

Fill Materials (>2 feet bgs)

Staining, odor, and other evidence of petroleum-related impacts were observed in the subsurface fill material, which ranges in thickness from approximately five feet to 18 feet (at MW-171) downgradient of AOC 26. As shown on the above table, one of the subsurface fill samples (S0853C1) contained benzene (19 mg/kg), benzo(a)pyrene (1J mg/kg) and two other PAHs at concentrations above the applicable soil delineation criteria. These samples are all located immediately downgradient of the EY4b LNAPL area, and it is likely that the observed impacts are directly related to the EY4b LNAPL area. Arsenic (60.3 mg/kg), which was also detected above the soil delineation criterion in the same sample (S0853C1), is well within the normal range for soils, particularly glauconitic soils in the Coastal Plain (Saunders, 2003).

Native Material

A clay/peat layer underlies the fill material in this part of the Refinery. In general, the peat layer is approximately five to 18 feet bgs. Only minor indications of petroleum impacts (e.g., petroleum odors) have been noted in the native material in this portion of the Refinery. Naturally-occurring iron was the only constituent to be detected above the applicable criteria in the native soil sample (S0853H3) collected downgradient of AOC 26.

Groundwater

As summarized on Table A.4.13, three hydropunch groundwater samples were collected in 1999 during the 1st-Phase Groundwater Investigation. These samples contained SVOCs, including PAHs above the applicable groundwater delineation criteria. However, these samples were collected using traditional hydropunch methodology, and are not considered to be representative of ambient groundwater conditions.

Two wells, MW-149 and MW-171 are located downgradient of AOC 26 The groundwater sample from MW-149, which is located near the edge of the EY4b LNAPL area and downgradient of AOC 26, contained benzene (9 μg/L) and arsenic (41.1 μg/L). There were no exceedances of groundwater criteria in the groundwater samples collected from MW-171. A more detailed discussion of potential groundwater impacts for the EY4b LNAPL area can be found in Sections 7 and 8 of the RFI Report.

Summary

Although AOC 26 was originally identified as an AOC because of potential discharges from the East Yard Bunker Slab, this AOC is completely encompassed by the EY4b LNAPL area, which has been fully delineated and characterized as discussed in detail in Section 7. Chevron recommends that AOC 26 be fully incorporated into the EY4b LNAPL area, which will be included for further evaluation in the CMS, and that this AOC be removed from the list of AOCs. Potentially impacted groundwater in this area will be evaluated further as part of the site-wide groundwater portion of the CMS.